

**Amendments to the Drawings:**

The attached replacement sheet of drawings includes the 'Prior Art' designation required by the Examiner for Figures 4a-4d. This sheet, which includes Figures 4a, 4b, 4c, and 4d, replaces the original sheet including Figures 4a, 4b, 4c, and 4d.

Attachment: Replacement Sheet 3  
Annotated Sheet 3 Showing Changes

## **REMARKS**

The present Amendment is in response to the Examiner's Office Action mailed November 2, 2006. Claim 14 is amended. Claims 1-23 are currently pending.

Reconsideration of the application is respectfully requested in view of the following remarks. For the convenience and reference of the Examiner, the remarks of the Applicants are presented in the order in which the corresponding issues were raised in the Office Action.

### **I. General Considerations**

Applicants note that the remarks and amendments presented herein have been made merely to clarify the claimed embodiments from elements purported by the Examiner to be taught by the cited references. Such remarks, or a lack of remarks, and amendments are not intended to constitute, and should not be construed as, an acquiescence, on the part of the Applicants: as to the purported teachings or prior art status of the cited references; as to the characterization of the cited references advanced by the Examiner; or as to any other assertions, allegations or characterizations made by the Examiner at any time in this case. Applicants reserve the right to challenge the purported teaching and prior art status of the cited references at any appropriate time.

In addition, the remarks herein do not constitute, nor are they intended to be, an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed herein are presented solely by way of example. Consistent with the foregoing, the discussion herein is not intended, and should not be construed, to prejudice or foreclose contemporaneous or future consideration, by the Applicants, of additional or alternative distinctions between the claims of the present application and the references cited by the Examiner, and/or the merits of additional or alternative arguments.

### **II. Drawings**

The Examiner objected to Figures 4a-4c as only illustrating that which is old. The replacement sheet includes the (Prior Art) designation required by the Examiner.

### **III. Rejection Under 35 U.S.C. § 102**

The Office Action rejected claims 14-23 under 35 U.S.C. § 102(a) as being anticipated by what the Examiner has characterized as the Applicants' admitted prior art (AAPA). Applicants respectfully disagree.

With respect to anticipation rejections, Applicant notes at the outset that a claim is anticipated under 35 U.S.C. § 102(a), (b), or (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. *Manual of Patent Examining Procedure* ("MPEP") § 2131.

Turning now to the substance of the rejection, there are several elements of claim 14 that the Examiner has failed to establish as being taught or suggested by the cited art. By way of example, the Examiner has failed to assert, much less establish, that the cited art teaches or suggests the following limitations of claim 14:

- "...said first set of epitaxially grown layers ... formed in a mesa structure...[and] said first set of layers is shaped into a mesa structure in an etching process to remove any adjacently arranged second set of layers in [a] non-light transmission direction."
- "...a semiconductor material having a dopant of a first type...[and] a cladding layer having a dopant of a second type, opposite to said first type..."
- "...an insulating material applied around the not etched cladding and contact layer."
- "...a second set of epitaxially grown layers...formed in a second photonic device region being coupled to said first photonic device region in a light transmission direction..."

In light of the foregoing, Applicant respectfully submits that the Examiner has failed to establish that claim 14 is anticipated, at least because the Examiner has failed to establish that each and every element as set forth in the claim is found in a single reference, because the Examiner has failed to establish that the identical invention is shown in as complete detail as is contained in claim 14, and because the Examiner has failed to show that the cited art discloses the elements arranged as required by claim 14. Applicant thus respectfully submits that the rejection of claim 14, as well as the rejection of corresponding dependent claims 15-23, should be withdrawn.

#### **IV. Rejection Under 35 U.S.C. § 103**

The Office Action rejected claims 1-23 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,226,310 to Takagi ("*Takagi*") in view of the AAPA. Applicants respectfully disagree.

For example, claim 1 requires, among other things, forming a first photonic device in a mesa structure, wherein the forming includes “using [a] first mask to form a mesa structure without an adjacently arranged second set of layers other than in [a] light transmission direction.” Claim 1 also requires: “. . . applying a second mask on [a] contact layer, covering at least a part of said first set of layers and at least a part of said second set of layers, . . . etching the contact layer and at least a part of [a] cladding layer, in the unmasked areas, . . . and applying an insulating material in the areas not covered with the second mask.”

Applicant respectfully submits that the Examiner has failed to establish that *Takagi* teaches or suggests these limitations. Rather, the rejection constitutes little more than a vague assertion that “Takagi et al teach etching processes are performed to form the mesa structure by selective etching through masking layer (col. 6, lines 21-col. 7, line 3).” See Office Action, p. 4. Thus, the Examiner has failed to assert, much less establish, that *Takagi* discloses the above-recited limitations recited in claim 1. Moreover, the Examiner has not established that the deficiencies of *Takagi* are remedied by the AAPA.

Further, as discussed above with respect to claim 14, the Examiner has failed to establish that *Takagi* teaches or suggests all the limitations of claim 14. The Examiner has also failed to establish that the AAPA remedies these deficiencies of *Takagi*.

In light of the foregoing, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 1-23 at least because the Examiner has failed to establish that the cited materials, when combined in the purportedly obvious fashion, teach or suggest all the limitations of the rejected claims. Applicant thus submits that the rejection of claims 1-23 should be withdrawn.

## **V. Double Patenting**

The Examiner provisionally rejected claims 1-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of copending U.S. Patent Application Serial No. 10/506,563 (the “’563 Application”).

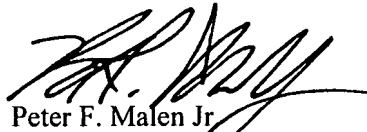
Applicants disagree that the claims of the present application are obvious in view of the claims of the ‘563 Application, but submit herewith a terminal disclaimer relative to this Application to overcome the provisional rejection and rejection of the claims under nonstatutory obviousness-type double patenting. Withdrawal of this rejection and allowance of the pending claims is respectfully requested in view of the terminal disclaimer.

**CONCLUSION**

In view of the amendments and remarks submitted herein, Applicants respectfully submit that each of the claims 1-23 now pending in this application is in condition for allowance. Therefore, reconsideration of the rejections is requested and allowance of those claims is respectfully solicited. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 2<sup>nd</sup> day of April, 2007.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "P. F. Malen Jr.", is written over the typed name.

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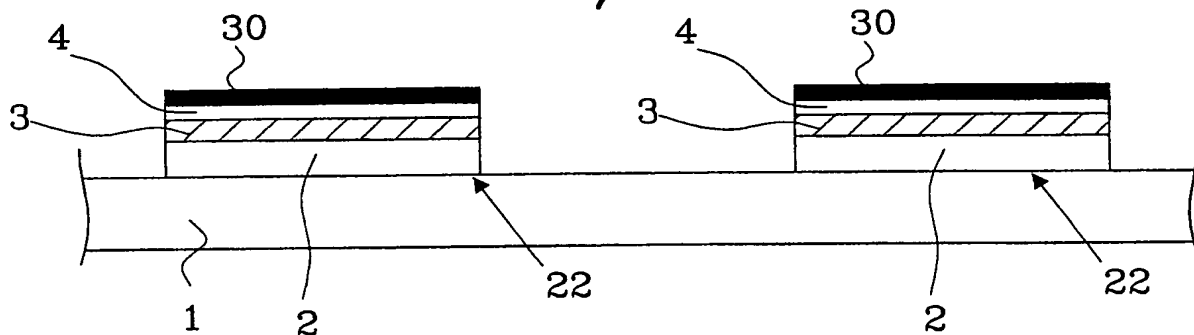


Fig. 4b (Prior Art)

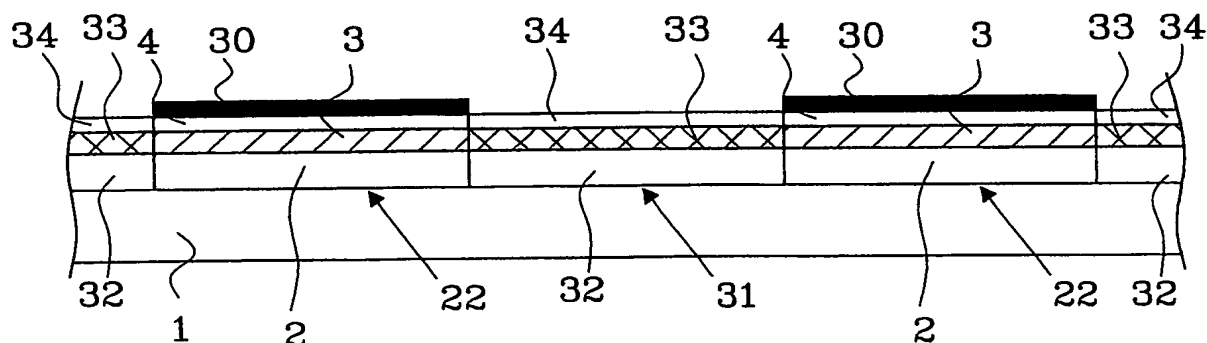
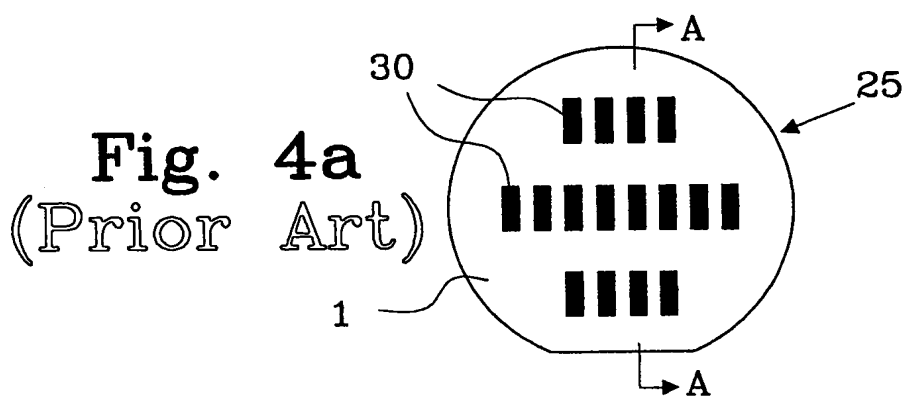


Fig. 4d (Prior Art)

